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Combat Crew

strategic air command

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October 1982

Combat Crew

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ON OUR COVER
Never far from tomorrow's headlines, Korea provides realistic training for SAC combat crews.

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DEPARTMENT OF THE AIR FORCE

Reliability

General John D. Ryan, USAF Ret.
Former Commander in Chief, SAC

The following editorial is a reprint from our March 1965 issue. The message it contains is as important now as it was then; perhaps even more so. Coordination, teamwork and *esprit* between operations and maintenance will always be a vital link in SAC's strategic reliability. Editor.

A philosopher once said that it was good for people to depend on each other. A common bond of dedication and trust can grow from such interdependence and is one of the finest experiences anyone can have. It is, in fact, one of the most compelling attractions of a military career.

The interrelationship between members of a combat crew is a case in point. I'm sure this experience is well known to most SAC crews. To a degree, this bond is shared with everyone in combat operations, all the way up to the highest level.

Crew coordination, teamwork, *esprit* are all different names for the same thing: trust. Trust is the foundation of reliability. These words, in fact, according to Webster, mean the same thing.

But such trust must go beyond the esprit of SAC combat operations. It must extend into every aspect of the command's daily routine. Particularly, it must closely tie together two of the pillars of our deterrent strength — operations and maintenance.

A crew places great faith in the people who maintain the aircraft that they fly. Their lives are literally in the hands of their mechanics. To a lesser extent this is equally true for missile crews. Their safety is based on sound maintenance.

More important, however, it is maintenance which provides the vehicles which may have to carry out the ultimate SAC mission, attack against an aggressor. The credibility of the deterrent is based in great part on the reliability of SAC's equipment.

The place where this trust and reliability are superimposed for the combat crews and maintenance troops is in the maintenance debriefing. Maintenance people must go to the "customer," the combat crew, to uncover suspect discrepancies and failing systems.

Maintenance people are not walking analyzers or mind readers. They must be told clearly, accurately and completely what maintenance is required.

On the maintenance side of the coin, the information offered by crews must be received by qualified, highly motivated specialists. It must be carefully analyzed to uncover repeat items, so as to evaluate procedures and systems. And, finally, repairs should be made promptly and correctly — not signed off with "ground checked and found okay."

To report discrepancies accurately, operations people must, of course, know their equipment thoroughly and understand the importance of reporting discrepancies in specific terms, rather than making vague complaints.

Together, operations and maintenance people can build a level of reliability that can far exceed that of the mute hardware they employ. To do so, they must develop the same kind of trust and common sense of responsibility for the mission that you find on a top combat crew.

This sort of trust is, as I have said, the foundation of reliability. Or, more properly, it is the heart of reliability. It is the intangible and unequalled contribution of man to the mission that can never be matched by a mere computer or machine.

UPDATE KOREA

Capt Mike Wright
60th BMS, Andersen AFB

June 25, 1950. North Korean forces pour across the 38th parallel attacking unprepared South Korea. The U. S. sends troops as part of a United Nations peacekeeping force. Air power plays a key role in the struggle to maintain democracy in Korea. Our bombers stationed in Japan and Guam pound the enemy day and night.

October, 1982. America maintains several thousand troops in the Republic of Korea. Air power is a key element in the defense of Korea. Strategic Air Command B-52s bomb targets in Korea on training missions. And the war is still on.

Yes, the war is still on in Korea with minor skirmishes and incidents occurring regularly. Ever since Korea was split into two countries by occupying American and Russian forces at the end of WWII, it has remained like an unexploded time bomb waiting to go off. Being pushed to the back burner by other world affairs has not changed Korea's volatility or importance. Spies, tunnels and the very real threat of imminent invasion from North Korea keeps the Republic of Korea in a constant state of alert.

One example of the tension in Korea occurred in August, 1976, when two U. S. Army officers were killed while supervising a detail to clear a tree in the Demilitarized Zone. Two days later, SAC bombers from the 60th BMS, Andersen AFB, Guam, flew for the first time over the Republic of Korea as a show of force. These missions demonstrated our commitment to the defense of the Republic of Korea and exposed the crews of the 60th BMS to a real world threat. These first flights were not training sorties, but since then we have established several different training packages which we fly weekly to Korea. Where in the U. S. do you get real enemy SAM signals, potentially fatal MIJI (Meacoming Intrusion Jamming and Interference) incidents and unknown fighters intercepting you out of nowhere anytime you are in country. Even Red Flag missions cannot match up to this type of intense training found only in a country on continuous red alert.

Starting with a full eight hour mission planning day, the crews of the 60th prepare for all contingencies on their long flights to the Republic of Korea. Especially vigilant are the EWOs and gunners who receive special briefings and updates on the situation in Korea. Extra paperwork is gathered up for the weekly flights; ICAO flight plan, ALTVs, etc. The crew briefing takes a little bit longer than back in the states with the defense team having possibly a little bit more to say. If a mistake is made in Korea it wouldn't be the first time a SAM was fired at a Buff, and who wants to be part of an international incident? So the briefings do take a bit longer. Some of the things that are different or that require more crew coordination are the EW action points, what the fighters can do and the frequent radio calls to be made. The radio calls are harder than you think when you add in a second aircraft and foreign controllers.

A typical flight might start with an 0400 local show, cell brief and MITO takeoff around 0700. The usual level off checks are performed, then a rendezvous is accomplished with Pacific Tanker Task Force aircraft for a heavyweight air refueling. After getting the gas, it's quiet, except for the reporting point calls to Andersen and Yokota airways. As you coast across southern Japan you might hit a simulated high target then set up for low level. IR-982 starts over the Cheju VORTAC on an island south of the Korean mainland and heads east along the southern coast of Korea. A terrain avoidance calibration peak check is done on Geoje-do Island and a turn inland is made north of Busan. Some challenging mountainous TA is flown westbound until a turn is made near Jeanju. Portside bomb plot is contacted and the target complex is hit just 30 miles south of Seoul. A very important, "Stop ECM," call is made just short of the EMA. If a racetrack is planned you would set up for the one nautical mile either side of centerline corridor that is flown on part of the racetrack. This small corridor is due to the numerous restricted areas. No relaxing on the racetrack here, and especially no relaxing on the exit of the route. A left turn out of the EMA to exit puts you right into a fighter intercept area. A right turn out of the EMA to exist flies you right along the DMZ, where some unusual ECM signals can be picked up. If you relax on this exit and wander north of course some disastrous results can happen, as you could quickly find yourself in unfriendly territory. On the return trip, a few more simulated targets can be bombed in Korea high level. Later in the flight, some Kadena fighters can be expected. As a bonus on the long flight back a quiet overwater nav leg is flown, with the help of pressure LOPs. If you are really lucky and it happens to be a checkride for the pilots, some pattern work completes the mission. That makes for an interesting 12.8 hour mission as such was my first flight ever at Andersen.

Occasionally, live drops of both bombs and mines are made in Korea, as well as other special HHD missions and joint operations. The biggest operation in Korea is Team Spirit which is held every spring. It involves all armed services of both the United States and Korea in a massive training exercise/show of force. Special plans and briefings are made at Andersen for this exercise, especially for the fighter escort and cover provided by the Republic of Korea, and of course, for the bomb and ECM runs to be made.

Members of the 43d Strategic Wing also participate in a program where we visit Korea for approximately five days to receive orientation briefings and visits to the Tactical Air Control Center and the DMZ. In return, ROK officers visit the 43d SW and the 60th BMS on Guam. Note that these missions are in no way D model specific. In other words, any SAC aircraft could easily find itself flying a Korean mission.

Korea sounds far away sitting back in the states (but so did the Falklands to the British). However, if a choice can be made between TDYs to Base X for STRCC flights or to Andersen for a real crew experience building mission, I know which one I would choose. Besides, it's a lot warmer here in Guam than at some bases in the states and the training appears much more interesting. If you want to go to where the action is, come on out to the 60th BMS, Andersen AFB, Guam.

THE MISSION

SSgt Rich Ferrell
19th BMW, Robins AFB

A recent mishap experienced by this unit reinforced the old saying: "You can't perform your mission if you can't perform it safely."

The scenario follows: Time: 2004L, night. Weather: scattered showers. Conditions: wet roads. Location: on base, between the Youth Center and the Alert Facility. Participants: aircraft commander, Captain; Communications Technician, Staff Sergeant.

The Captain was in the middle of his week on alert. He had gone to the Youth Center to referee a basketball game, an approved area for crews. His alert vehicle was parked for quick departure if the need arose. During the game, the klaxon sounded. At first, the Captain confused the klaxon for the scorekeeper's buzzer, but when the klaxon sounded again he recognized what was happening. Leaving the game at a dead run, he jumped in his truck, started it, and then turned on headlights, wipers, and emergency beacons. He did not fasten his seatbelt, and unknown to him, the beacons did not work. The Captain proceeded in the most direct route to the Alert Facility. Witnesses stated that his speed was excessive.

Meanwhile, the Sergeant had left his shop to go eat. He was proceeding south at approximately 25 miles per hour when he saw a flashing red alert beacon mounted on a pole at the top of a hill along the road. At the same time, he saw headlights come over the hill. It was an Air Force pickup truck. Suddenly, the rear end of the pickup skidded to the left into the Sergeant's lane. He braked and took evasive action.

The Captain was in a hurry. After all, he was the aircraft commander and he might be late to respond. As he approached the top of a hill heading north, he saw the glow of headlights approaching. He went over the crest of the hill and applied his brakes. Suddenly the rear end skidded and he lost control. He was going to hit that car!

The car and truck collided side to side. After they stopped moving, the Captain crawled out his right side window since the doors were jammed shut. He ran to the car and checked the driver. The Captain had bumped his head and received some bruises, but the Sergeant had a broken jaw. He also was not wearing a seatbelt.

YOU DESERVE A BREAK TO... WHAT THE...?
WHO WAS THAT MASKED-MAN?
HI HO P.V. AND AWAY!
FLIGHT LINE
VAROOM
HENDERSON
WOUSHHH
KEMO SABE WHERE YOU GET'UM SNEAKERS?
SHH
POOF
YEA!

DODGES A BULLET!

After the Captain asked passersby to notify the Security Police, he commandeered a POV and driver who had stopped to help. Continuing his alert response, the Captain made it to the aircraft, strapped in, and taxied out. During the taxi, he notified the command post of the accident.

The actual cost of this little escapade? One destroyed government pickup, one destroyed Toyota sedan, several days hospital care for the Sergeant, and a blemish on an otherwise spotless record for the Captain.

The possible cost? Pick any of these below:

Two fatalities.

An alert aircraft unable to generate.

Possible loss of an aircraft and its crew due to mistakes made by an injured pilot.

A mission incomplete.

A lost war.

"Well," you say, "the worst didn't happen." You're right, but will we be this lucky next time?

The moral of this story? This incident actually occurred. The Captain was able to meet his response time even after being involved in an accident. Tragedy was narrowly avoided.

Here are some items to ensure that this does not happen again, anywhere we have an alert committment:

- When responding to an alert, drive the speed limit.
- Use your seatbelt.
- Ensure all parts of your vehicle are operating correctly.
- Do not assume that you always have the right of way.
- Conditions may be such that driving the legal speed limit is unsafe.
- Always travel with a faithful Indian companion named TONTO.

PASSENGER BRIEFINGS: HOW EFFECTIVE ARE YOURS?

MSgt Ronald D. Livingston
7 BMW, Carswell AFB

When you are scheduled to carry passengers on your aircraft, do you conduct a thorough passenger briefing? If your family were on board, would you brief them any differently than the other passengers? I'm sure you wouldn't just tell them to "Strap in and don't worry about a thing." In the last few years, several accident and incident reports have referenced passenger briefings that were inadequate or nonexistent. Whether these substandard briefings were a result of a lack of experience, insufficient knowledge, or simply a misunderstanding of directives, we need to take a look at ways of making passenger briefings more effective. Let's begin by looking at the crew's responsibilities.

In the last few years, SAC has expanded its passenger carrying capability from active duty personnel to include dependents and retired personnel. Regardless of the type of passenger, we must be concerned with their *safety.* It is imperative that we be completely knowledgeable of the directives that govern passenger carrying operations.

Some of the directives that we should review include AFRs 60-9, 60-14, 60-16 and SACRs 55-12 and 76-1. According to AFR 60-16, the responsibility for the overall conduct of the flight lies with the pilot in command. It is the aircraft commander's responsibility to insure that each aircrew member and passenger be briefed on items that may affect safety or mission completion. In almost all cases, the boom operator is delegated this task. AFR 60-16 outlines the minimum items to be included in the passenger briefing and further directs the operating commands to supplement briefings with printed information guides outlining emergency information found in the flight manual. These information cards are dispersed throughout the aircraft, one guide for every five seats, and may be a useful tool for you when preparing and conducting your passenger briefing. Now that we have familiarized ourselves with the responsibilities outlined in AFR 60-16, let's look at some of the components of a good passenger briefing.

Prior to preparing the briefing, you should consider how much time you have available, how many passengers you may have to brief and whether you have all the necessary equipment available. Generally passenger manifests are closed out not later than 30 minutes prior to scheduled departure time. The manifest may be closed out earlier to meet operational requirements, so you may wish to close out the manifest up to one hour prior to departure time to allow sufficient time to brief and transport the passengers to the aircraft. Coordinate with the appropriate agency the time and location you desire for the briefing. The number of passengers may help determine the briefing location. Obviously, if you have a large number of passengers, the best location to conduct the briefing would be a large quiet room near base operations or in the passenger terminal. However, if a room is not available, you may have to brief the passengers on the bus. As a last resort, brief the passengers in the aircraft. However, if you brief in the aircraft, you may be faced with several problems such as engine noise from adjacent aircraft, disruption of your briefing by maintenance or cargo loading personnel and the problem of confined space which may make it difficult for you to demonstrate or for the passengers to observe your briefing. Additionally, the Dash One, Section VIII, states that if you do brief in the aircraft, you must complete the briefing before engine start. This requirement alone may cause you to rush your briefing or make it less effective than it could be. Finally, make sure that you have available all the safety equipment you'll need for the demonstration during the briefing. For example, you would want to demonstrate proper fit and use of LPU (floatation device) on overwater flights and for all flights you'd want to demonstrate the use of the passenger oxygen kit. You might want to have another knowledgeable crewmember available to demonstrate equipment use while you provide the explanation.

Now you're almost ready to brief, but there's one additional thing to prepare; that's you, the crewmember. Most people have a definite fear of standing in front of a large group of people and talking to them as an expert. This is especially true if the speaker is young and relatively unaccustomed to public speaking when the "audience" is older and/or of much higher rank. If you have thoroughly organized your presentation and know your procedures, you are halfway to your goal. To aid you in reducing your fear, practice briefing a knowledgeable individual in your squadron. You may need to practice again, increasing the number of listeners until you feel comfortable with a large group. A few more preparatory items are in order before the actual briefing is conducted.

Check your appearance. Tidy up your uniform, buttons buttoned, zippers zipped, nothing protruding from the pockets. Look professional. Speak clearly and at a rate that can be understood. You might begin by introducing yourself, state your purpose, and finally make sure everyone knows that if they have a question during or after the briefing that you'll be glad to answer it. The only dumb question is the one that isn't asked. Remember that someone's life may depend on how carefully and thoroughly you answer a question, so don't get in a hurry.

Avoid using abbreviations and acronyms. A crewmember may know what a P.O.K. is, but his spouse would probably relate to the object better if you referred to it as a portable oxygen kit. Talk to your passengers, don't read to them. Use eye contact. Show them that you are interested in each individual's safety and comfort. Show your confidence and your passengers will be more relaxed. Attempt to reduce passenger anxiety at every opportunity. Utilizing lead phrases such as "In the UNLIKELY event of an aircraft malfunction. . ." or "The life support equipment we have on board for your PERSONAL safety includes. . ." can reduce passenger anxiety if you continue to demonstrate and explain the equipment and procedures calmly and confidently. When briefing the use of the passenger oxygen kit you will undoubtedly remind the passengers that Air Force regulations require that they keep their oxygen with them when the aircraft is above FL 250. You might add that seasoned air travelers make it a point to always have oxygen readily available regardless of altitude. We all know of

Continued on pg. 26

COMPENSATING FOR WINDS

REVISITED

First published in Combat Crew, August 1979

By Maj Tome H Walters

Barksdale AFB
1 CEVG/STI

Many crewmembers often ask what is the most important function for a navigator to perform when on final approach. Well, tech order procedures obviously come first. But since wind shear has made the "headlines" once again, the techniques discussed in the following article certainly should receive some attention. As always, developing effective crew coordination requires total crew effort. Since airplanes seldom crash at altitude when on airspeed, a good place to start developing good crew coordination is during the approach and landing phase of flight. After all, a lot of airplanes have crashed when they got too slow and low to the ground.

SITUATION: A KC-135 crew at a northern base was being vectored for a PAR touch and go. Computed final approach speed was 145 KIAS. Surface winds were reported as a 20 knot direct headwind (no gust). The PAR has a 2.5° glide slope.

The pilot briefed 730 feet per minute rate of descent. At start descent, he set flaps, reduced power, and established 700 ft/min on the VVI. Indicated airspeed began decreasing and the aircraft went well below glide slope. The pilot added power and increased the pitch. The aircraft stablized on the glide slope with an unusually high power setting and the VVI reading 450 ft/min.

QUESTION: 1. What would you suspect at this point? (Clue — aircraft pitch, power, and configuration were correct.) 2. What changes in pitch and power would you anticipate prior to landing?

DISCUSSION: Take half credit if you answered "Wind Shear" to question one. That is certainly a possibility at this point. Abnormal pitch and power settings, with an unusually steep or shallow descent rate, should key a pilot to be alert for potential wind shear.

When we talk about wind shear, we usually think of a sudden change — dropping a chunk of airspeed in the snap of a finger. At this point, we don't know if a shear exists or not.

If your answer to question one was a "decreasing headwind," go to the head of the CIF. We obviously have a strong headwind. It might decrease suddenly or gradually.

The answer to question two is a power reduction and decreasing pitch as the headwind decreases.

The situation is not academic. It happened to a young aircraft commander with a CEVG evaluator in the jump seat. He handled it well, and, yes, he passed. A good crosscheck certainly helped. The pilot was not aware of the decreasing headwind. Had he been, it would have eased his workload considerably. The world's best crosscheck won't tell a B-52 or a KC-135 pilot what the ground speed is. But a navigator can. The purpose of this article is to point out to both pilots and navigators that ground speed is important and show how to use it in this situation.

What does ground speed mean to the pilot? How do you use it? To answer these questions, look at figure one.

In our case, indicated airspeed at glide slope intercept was 145. But ground speed was 90 knots!

The headwind at that point was 55 knots. But remember the surface winds were 20 knots. By comparing the two winds, the pilot can note the headwind drops off 35 knots from start descent to touchdown. That comparison tells you what type of situation you're facing — an increasing headwind or a decreasing headwind. It also tells you the magnitude of the change.

The pilot first uses the ground speed to determine the actual rate of descent required. Look at figure two. In our case, the pilot had briefed 730 ft/min by mistake. At 145 KIAS, 650 ft/min is the correct number. But the ground speed of 90 knots called for 395 ft/min. Quite a difference!

Knowing the ground speed, along with the indicated airspeed, and the surface winds, gives the pilot the chance to get mentally ahead of the aircraft. Being ready and anticipating what should happen next is a lot easier than reacting to the unexpected.

Many of us have experienced a gradual decreasing headwind or the sudden decreasing headwind associated with a shear. While few of us have experienced a sudden, severe shear, all of us have experienced the effects of an increasing or decreasing wind (whether we knew it or not). The essential difference is how fast the change takes place. Understanding how to handle either situation makes it easier to understand the other.

Most dopplers provide accurate ground speed information down to about 300-500 feet above the ground, depending on the terrain. The new solid stated dopplers and the INS/DNS give a more useful wind and ground speed information throughout a wider range.

RECOMMENDED TECHNIQUES. PILOT. **1.** Note the surface winds when you receive the destination weather. **2.** Brief the target rate of descent for the approach, based on planned indicated airspeed. **3.** Compare indicated and ground speeds inbound to the final approach fix or immediately upon starting descent. **4.** Adjust the target VVI based on the actual ground speed. **5.** Be prepared to adjust pitch and power as the winds change during the approach.

NAVIGATOR. **1.** Note the surface winds when you receive the destination weather. **2.** Note and crosscheck the rate of descent the pilot briefs for the planned indicated final approach speed. **3.** Inbound to the final approach fix, note the winds and compare indicated and ground speeds. **4.** When the pilot calls "Descending to (DH/MDA)," respond with the ground speed. **5.** Crosscheck the rate of descent table in the approach book for the actual ground speed. **6.** Advise the pilot if the required descent rate differs from the briefed by more than 100 ft/min. **7.** Monitor ground speed and let the pilot know if it changes by 10 knots or more.

You might select other parameters in place of 100 ft/min and 10 knots. We encourage you to adapt the recommended techniques as you think helpful and appropriate.

Navigators often ask what they can do to help the pilot in the traffic pattern. Providing ground speed on final is a simple, useful example of pilot-nav crossflow. Knowing how to use the information is the difference between a stablized approach and checking the limits on the PAR scope.

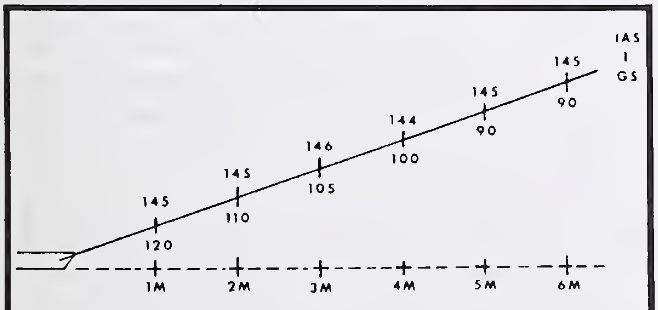
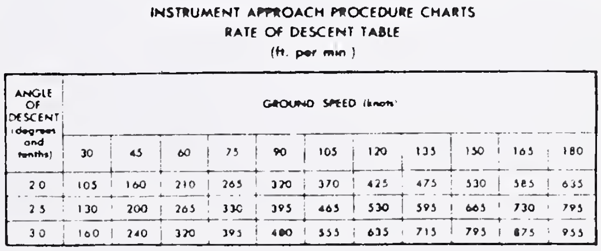


FIGURE 1

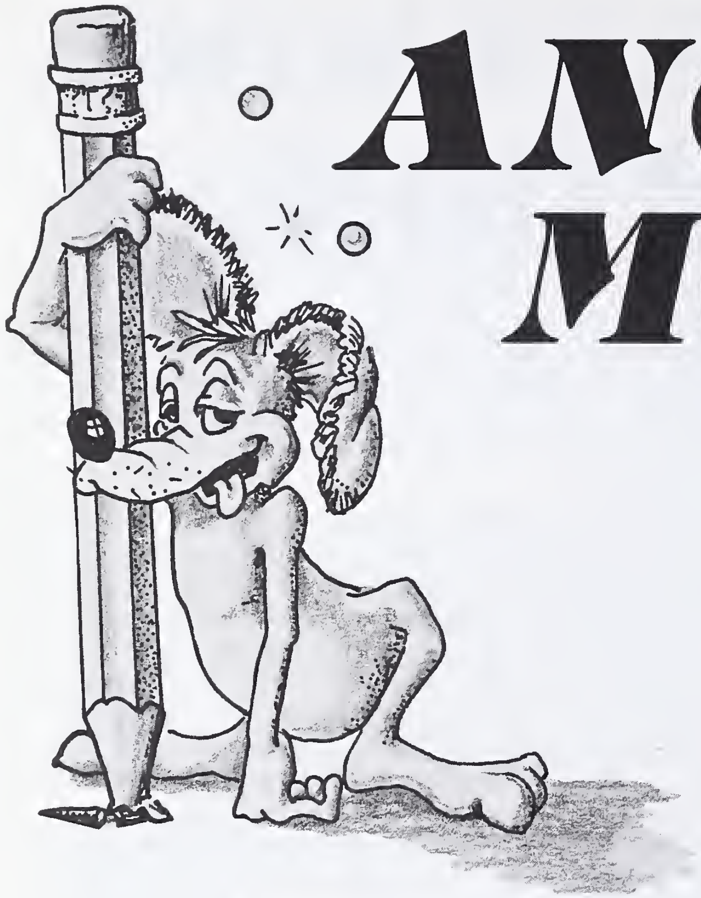


INSTRUMENT APPROACH PROCEDURE CHARTS
RATE OF DESCENT TABLE
(ft. per min)

ANGLE OF DESCENT (degrees and tenths)	GROUND SPEED (knots)										
	30	45	60	75	90	105	120	135	150	165	180
2.0	105	160	210	265	320	370	425	475	530	585	635
2.5	130	200	265	330	395	465	530	595	665	730	795
3.0	160	240	320	395	480	555	635	715	795	875	955

FIGURE 2

ANON E. MOUSE



IT'S NO FUN!

Safety, safety, safety! It seems we're endlessly bombarded with information, articles, and lectures intended to keep our bodies and airplanes in one working piece. A typical squadron library is bound to include copies of Flying, Combat Crew, Driving, TAC Attack, and probably a couple others I can't think of right now. One thing all the different safety articles and briefings have in common is the idea that we can learn from someone else's experience. Whether that someone's experience cost him his life, or just some new shorts, we hopefully can prevent ourselves from being put in the same situation. I'm writing this article to prevent perhaps just one person from putting himself in the situation I put myself in a few years ago.

Not too long ago, in a galaxy far, far away — whoops, sorry, wrong story. Not too long ago, I was learning to dance on laughter-silvered wings over the mesquite trees of Del Rio, Texas. My most vivid memories of my year at Laughlin AFB other than flying are of water skiing and partying. I was in a great class that really enjoyed a good time. One of our parties started on a Wednesday night and was supposed to be just a few beers to celebrate a classmate's birthday. As the night grew older, the beer tasted better, and eventually there was as much beer on the floor as was in us and we were doing carrier landings across the barroom floor. I remember driving home that night with one eye closed in order to minimize the number of lines on the road; fortunately, my car knew the way.

The next day was Thursday, a normal flying day. The skies were gray and overcast, but not nearly as gray as I felt. I hoped that flying would be cancelled. When I arrived at the squadron, most of my class felt about the same as I did, even though over eight hours had passed since the party had ended. The first flying period was cancelled for weather; thank God! For the second flying period, they decided to try and launch two of us off as a formation — oh nuts! I was one of the two — oh #¢&@!

So off I went. I strapped my T-38 to my back and said "Toop" on the radio. The clouds were layered in the work, but we eventually found enough room to practice some rejoins. On my first turning rejoin, my arm-bending the night before caught up with me. About 500 feet out, my stomach decided to rid itself of whatever was in it, and I had to have the IP complete the maneuver. After tying off my white baggie, I felt halfway decent and finished up the mission without further incident.

At the debriefing, my IP didn't say anything about my talking with Ralph the wretch god, but I thought about it a lot. The main thought running through my mind was "What if I had been solo?" Would I still have gotten sick? Maybe, maybe not. Would I still have felt lousy? Yes. I had put myself in a position where I couldn't maintain control of my aircraft and I was not too proud of myself for doing it. I've partied plenty since leaving Del Rio, but not when I know I'm going to fly the next day.

The night prior to a flight is not a night for heavy drinking. We all know the rule of thumb concerning the body's capability to process alcohol-one drink per hour (or one hour per drink) in order to drive home sober; however, most of us do not realize that it takes about two hours per drink to get all the alcohol out of blood (according to AFISC). To put that another, way, if you have a little party and guzzle eight drinks (not hard to do), then leave the party at 10:00 p.m. and have a flying incident at noon the next day, the flight surgeon will find traces of alcohol in your blood and will enter it on the safety report.

Well, my story is over. It should be obvious that a person does not want to try to fly with a hangover; people get killed flying airplanes when they are behind the power curve and feeling lousy. By the way, there is no written rule in Air Force regulations concerning the time period between drinking and flying. There is however a SAC regulation on the subject (55-40) and an FAR (91.11); both dictate eight hours from bottle to throttle. That's a minimum.

A FUNNY THING HAPPENED

This article is in response to Combat Crew's request for "War stories."

Before being commissioned and turning in my flight suit for missile crew blues, I was a B-52 gunner and this one alert I'll not forget. 1900 hours. It was very dark outside when the klaxon sounded. In fact, it was so dark it was impossible to see our aircraft. After getting past the guard, I turned where my plane should be — right direction, but wrong location — and ran into the fuselage. After rebounding, I began removing engine covers — the first, a large red plastic one, smacked me right on top of the head. When I got into the dimly lit plane, I saw five helmets so I slammed the hatch shut. When it wouldn't latch, I opened it to try again. There, standing underneath the aircraft, holding his crushed hand, was my EW; he told me what he thought of that as he got on. While shutting down, we were informed that our crew chief had hit an antenna and required six stiches in his head. As we were getting out I accidentally kicked out my EW's flashlight which shattered when it hit the ramp.

I was feeling really rotten while I limped back to the mole hole — I'd smashed the EW's hand, ran my body into the fuselage, dropped an engine plug onto my head and my left foot was killing me. The flight surgeon diagnosed three broken bones — cause unknown. All in all, it was a very bad night.

Figure 1

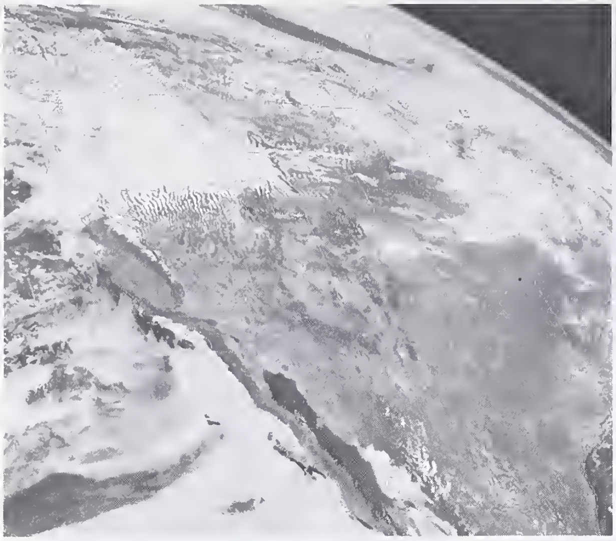
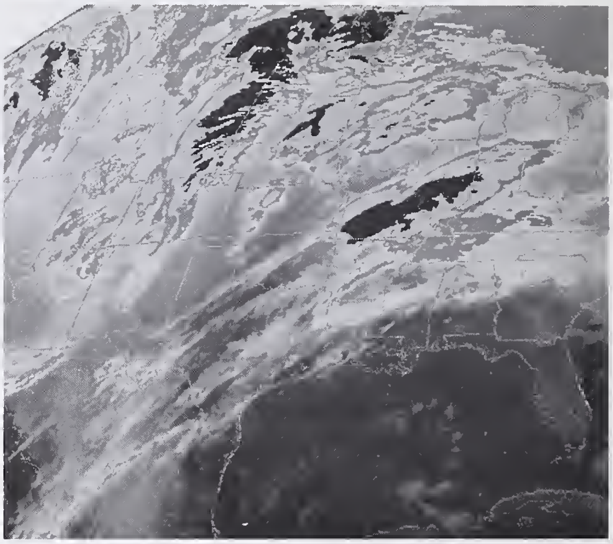


Figure 2



A BIRD'S EYE V

Maj James C. St John
HQ SAC/DOWA

Fall is here and in most parts of the country flying weather is excellent. As we enjoy Indian Summer and cool nights we need to start preparing for winter. Cars, trucks, and houses need to be winterized, and so do your preparations for flying. During winter, weather will adversely impact your mission plans more often than during the summer. At northern bases winter weather hazards include rapidly changing low visibilities in snow, strong crosswinds, freezing rain or drizzle, icing, turbulence and slippery runways and taxiways. In the southeastern U.S. winter storms may bring rain, snow or freezing rain and drizzle. Fog and stratus moving rapidly north can bring very low ceilings and visibilities from the Gulf of Mexico, to the Great Plains. The winter is also the peak thunderstorm season along the Gulf Coast. Winter brings heavy rainfall and extremely heavy fog to our west coast bases.

Not only terminal weather is affected by winter. Dense shields of high cirrus clouds are associated with the strong jet streams of winter. These cirrus shields can greatly restrict visibility in Air Refueling tracks. Strong winter winds in the Rocky and Appalachian Mountains produce mountain wave turbulence which affect Low Level Instrument Training (IR) Routes. In fact IR 435, the fall semester ORI route, experiences moderate or greater mountain wave turbulence nearly 50% of the time during December.

All of these weather impacts require that you carefully plan ahead. Your base weather station can help you with this. Long range planning is best assisted by climatological data. As an example, if you plan to fly at Castle AFB in January, the probability that the field will be below SAC minimums is 24% from 0600 to 0800 PST. From 1200 to 1400 PST the probability is only 2%. Obviously scheduling later takeoffs reduces the chance that your departure will be delayed for weather. Your base weather station receives excellent 24-48 hour forecast products from Air Force Global Weather Central and The National Weather Service. These forecasts give an idea of likely conditions for your mission planning the day before you fly. While we can't guarantee

Figure 3

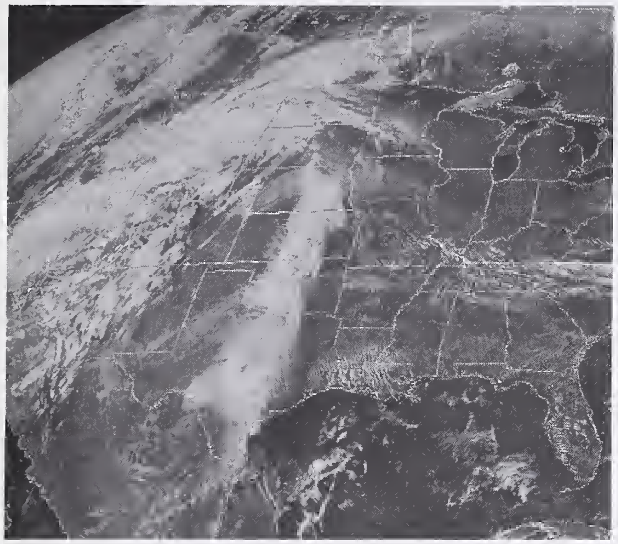
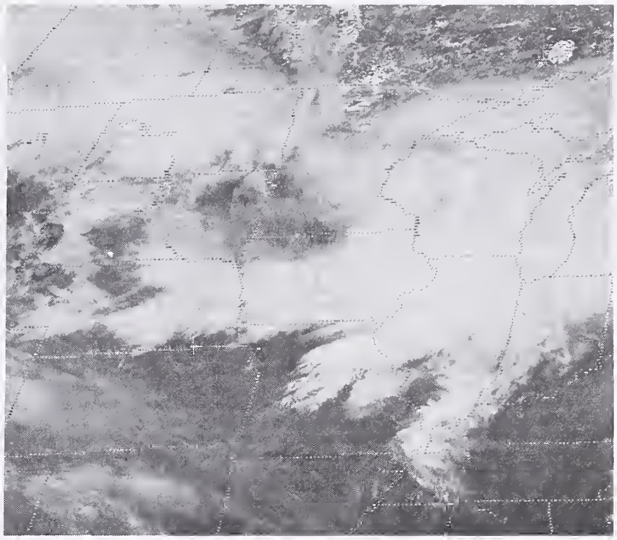


Figure 4



EW OF WINTER

exact conditions in a 24 hour mission planning forecast, we can give a pretty good picture of expected hazards. This will allow you to plan alternative courses of action, should you be unable to complete your planned mission.

During your pre takeoff briefing we can give a much better forecast of conditions for your mission. Unfortunately, the atmosphere is much more complicated than our computer models, and even our short range forecasts go astray on occasion. That is why we issue weather advisories for hazardous conditions at bases, AR tracks, and IR routes. Since we can't call you in the air, we pass these "nowcasts" to Air Traffic Control facilities and Command Posts. If you want more information than these advisories contain, call a PMSV and talk directly to a forecaster.

Our forecasters now have a powerful new tool for watching the weather and making these "nowcasts". All SAC owned bases, and many other bases where SAC units are tenants, have GOES Taps. GOES stands for Geostationary Operational Environmental Satellite. What it means is that your weather forecaster receives a weather satellite picture every 30 minutes. The resolution of these pictures is 1/2nm x 1/2nm in visible imagery and 5nm x 5nm in infrared. The frequency and resolution of these pictures allow forecasters to closely monitor AR tracks and IR routes. These are usually in sparsely populated areas where there is a shortage of conventional weather data, so the satellite coverage can really improve our weather watch.

The accompanying pictures show the types of hazards found during winter time. Figure 1 shows wave clouds indicative of extreme mountain-wave turbulence from northern Colorado to South Dakota. Although this picture is from summer, these patterns occur frequently during winter in the mountains. Figure 2 shows an intense winter storm in the development stage. This is enhanced infrared imagery which enables us to determine cloud top temperatures. This storm in January 1982 spread heavy freezing rain from Nebraska to Ohio and heavy snow from the Dakotas to Michigan. Note that the storm is composed of many separate cloud groups. Studies of satellite imagery show that storm systems are not individual entities. Instead, storms are organized socieites of cloud groups produced by atmospheric motion. These cloud groups or motion system then interact with each other to produce the larger storm systems. These storms are, therefore, much more complicated than the surface weather chart with its highs, lows, and fronts would seem to indicate.

Figure 3 shows Gulf stratus moving into the Great Plains. This Gulf moisture moves rapidly with the nighttime low level jet stream. In some cases, Gulf stratus has moved from south Texas to Minot ND in 48 hours, taking Minot AFB below minimums.

Figure 4 is tricky. It shows a winter storm moving east leaving snow behind. The only way to tell where the clouds end and the snow begins is to look for the pattern of rivers in the snow field. This points out a limitation of satellite imagery. It requires interpretation by a trained forecaster. We have an intensive program for training our forecasters to analyse and interpret satellite data — so ask for their expert opinions, before jumping to conclusions about a satellite picture.

We recently heard a war story about a T-38 pilot who spent a weekend flying cross-country. The only weather data he received all weekend was a satellite picture he picked up at his home base on Friday. Hopefully, like most war stories this is a gross exaggeration. Why? Because satellite images are observations, not forecasts. Look at Figures 5 and 6. They were taken five hours apart. Get the picture?

Weather information will only help you if you plan ahead. In winter flying, it is important to keep your options open so that you don't get caught by rapidly changing weather conditions. Don't put yourself in the position where you run out of gas, altitude, and ideas all at the same time. Have a good winter.

Figure 5

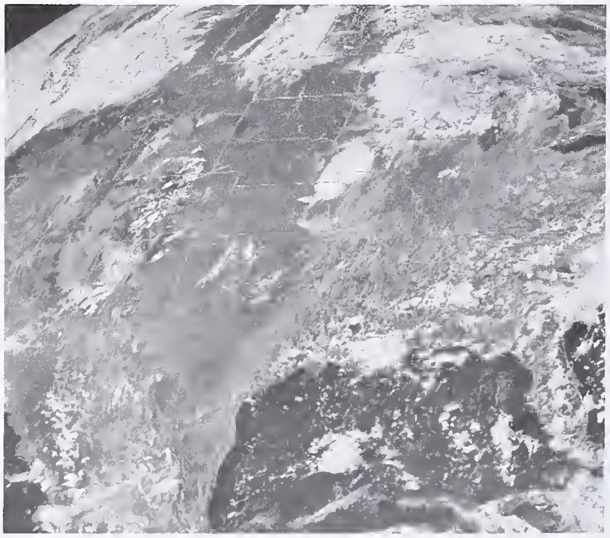
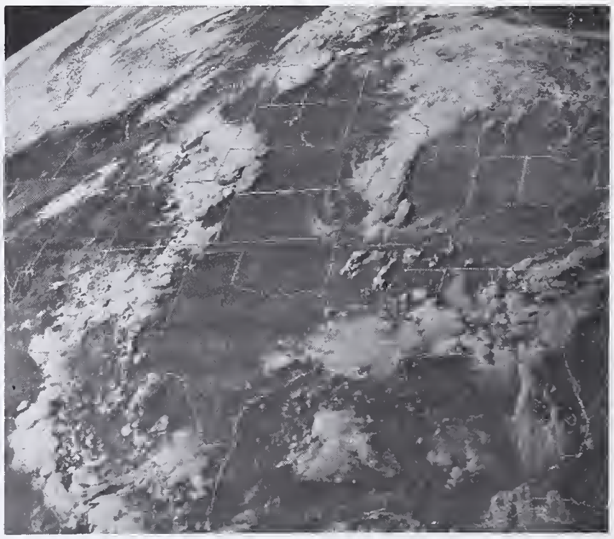
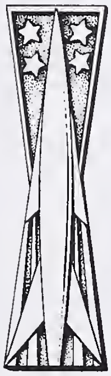
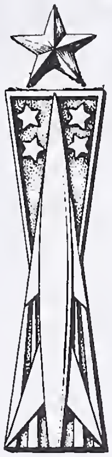


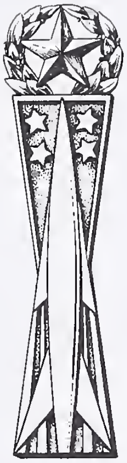
Figure 6



A BADGE OF HONOR







Capt George C. Simon, Jr.
4315th CCTS, Vandenberg AFB

A common bond exists between all professionals, secured by like experiences, technical expertise and devotion to duty. This is especially true of SAC combat crewmembers, be they flight crew or missile crew. Their history is long and their heritage is rich in tradition. In time of war these crewmembers are responsible for delivering SAC's strategic nuclear capability as manifested in our manned bomber and intercontinental ballistic missile forces. Each group wears what I like to call **a Badge of Honor** which identifies the wearer as a member of that particular profession. For the flight crewmember this badge of honor is Air Force wings. For the missiler it is the missile badge.

In keeping with Project Warrior and the celebration of our heritage, this is an appropriate time to review the origin of our missile badge and the significance of its design. On May 23, 1958, the first distinctive badge was established in an effort to recognize those individuals within the Air Force who, by virtue of their job assignment and attainment of command, operational or technical skills, had a direct role in the development, maintenance or operation of guided missiles. The badge was called the "Guided Missile Insignia," and was authorized for those individuals who performed duty in or were associated with Snark, Atlas, Thor, Jupiter, Matador, Mace, Bomarc, Titan and Minuteman missile systems. This definition allowed the badge to be awarded to a wide spectrum of individuals, but it did not include individuals performing duties in such areas as food services or personnel.

Initially, the Guided Missile Insignia was authorized for officers and airmen who had "demonstrated satisfactorily their ability for at least three months to accomplish their assigned tasks and be recommended by their supervisors." In 1960, however, that time period was extended to six months. In 1963, several changes occurred. First, the name was changed to the "Missileman Badge," and later three levels of expertise were established: Basic, Senior, and Master Missileman. The levels are similar to the ones awarded to pilots and navigators.

The second change mandated that all personnel be required to complete specialized missile training to be eligible for the badge; indoctrination or familiarization courses did not qualify. However,

Continued on pg. 26

-135 ONBOARD COMPUTER

FUEL SAVINGS AND TAKE OFF DATA, TOO!

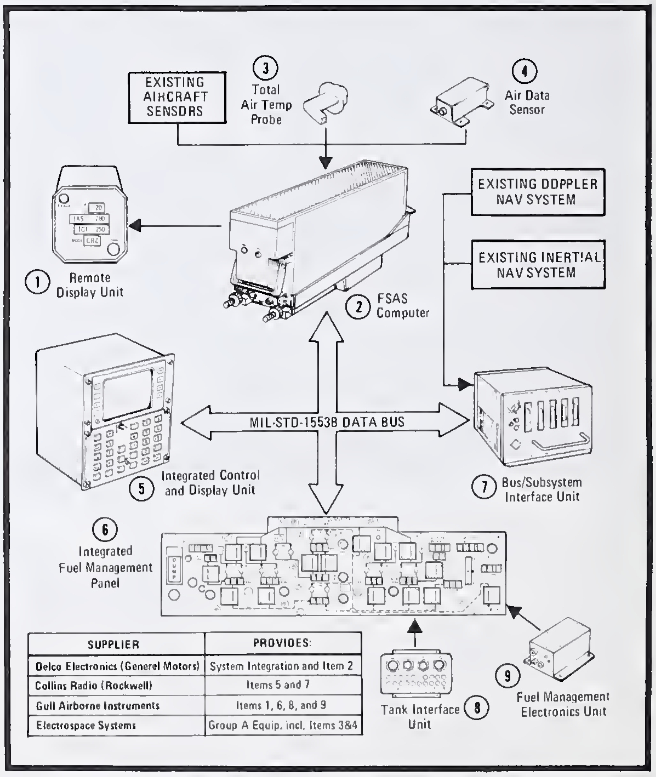
This article was prepared by Delco Electronics, GMC, Santa Barbara Operations, for SAC/XPHN . . .

In the summer of 1983 cockpits of the -135 series aircraft will take on a new look as aircraft contractors begin installing the new Fuel Savings Advisory/Cockpit Avionics System (FSA/CAS) . . . first step in a long range program to modernize the cockpit electronics of the C/KC-135 fleet. Installation of this new system will provide SAC air crews with three important functions — fuel savings advisories, integrated fuel management/center-of-gravity computation, and integrated data transfer — to aid them in flying the most fuel efficient flight profiles. Full use of this sytem can reduce fuel consumption as much as 3 percent, saving Air Force 60 million dollars a year.

NEW EQUIPMENT ITEMS

The data flow diagram in Figure 1 shows the major elements of the new system. Four leading aerospace contractors, headed by Delco Electronics Division of General Motors, are teamed to design and supply these components. Figure 2 shows a closeup view of the FSA/CAS controls and displays as they will be installed in the -135 aircraft cockpits. This is an actual photo of a 135 cockpit retouched to show the planned placement of the new system displays on the pedestal and instrument panel.

The new Integrated Control and Display Unit (ICDU), which replaces the existing Delco Carousel IV INS CDU, emulates the current INS/DNS procedures and greatly expands the display of navigation parameters. A second ICDU may be installed at a later date on the opposite side of the pedestal. The central location of the radarscope and new ICDU was made possible by replacing the existing fuel management panel with a miniaturized Integrated Fuel Management/Center-of-Gravity System (IFMCGS). The Remote Display Unit (RDU) shown mounted on the center instrument panel will provide the pilot easy-to-follow advisories for fuel efficient operation.


EXISTING AIRCRAFT SENSORS
③ Total Air Temp Probe
④ Air Data Sensor
EXISTING DOPPLER NAV SYSTEM
EXISTING INERTIAL NAV SYSTEM
① Remote Display Unit
② FSAS Computer
MIL-STD-1553B DATA BUS
⑤ Integrated Control and Display Unit
⑦ Bus/Subsystem Interface Unit
⑥ Integrated Fuel Management Panel
Tank Interface Unit ⑧
⑨ Fuel Management Electronics Unit

SUPPLIER	PROVIDES:
Delco Electronics (Generel Motors)	System Integration and Item 2
Collins Radio (Rockwell)	Items 5 and 7
Gull Airborne Instruments	Items 1, 6, 8, and 9
Electrospace Systems	Group A Equip. incl. Items 3&4

FIGURE 1 Elements of the new FSA/CAS

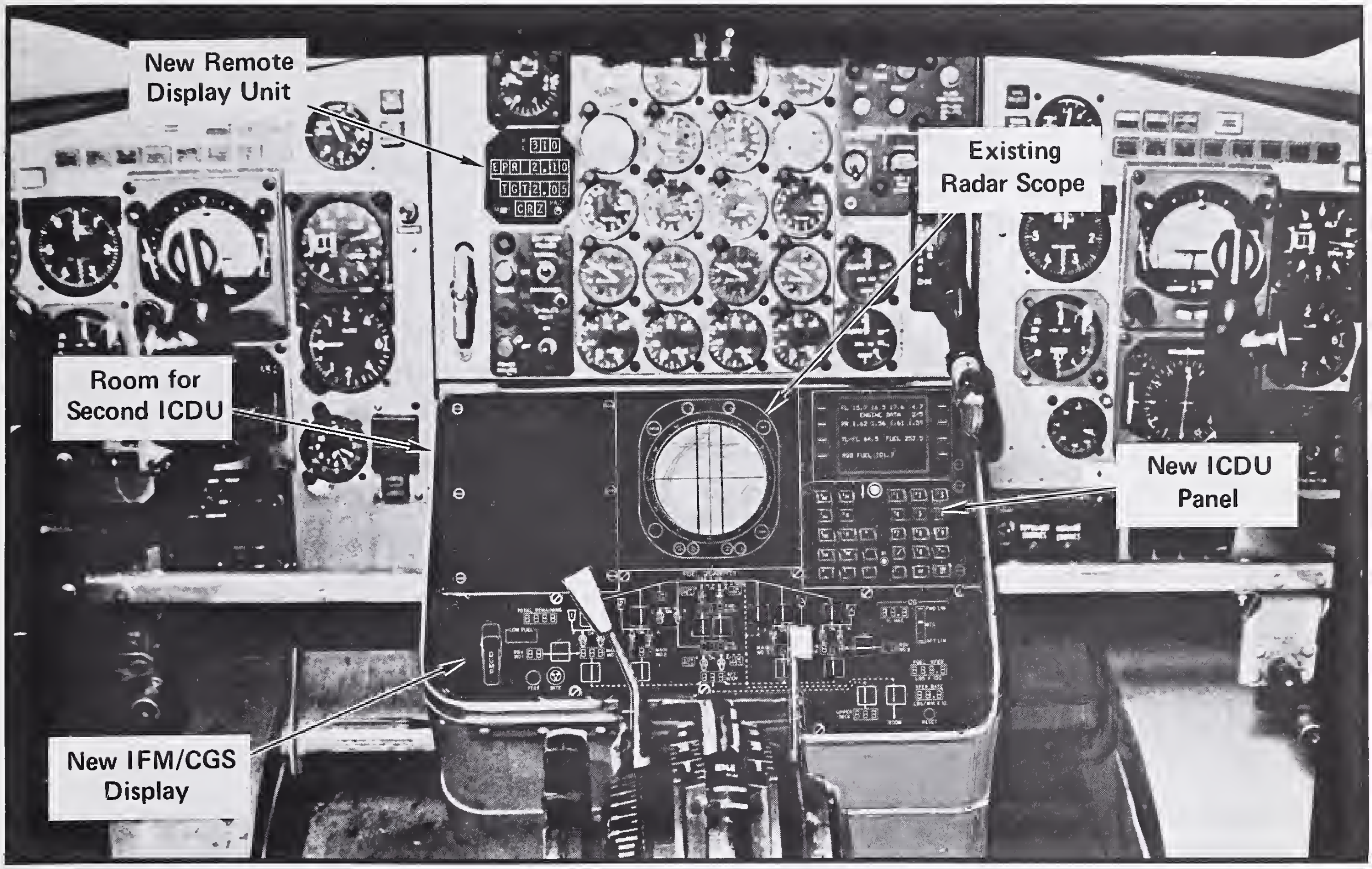


FIGURE 2 Cockpit photo showing placement of new system displays

FUEL SAVINGS ADVISORIES

The high cost of fuel for air transportation is having a major impact on the Military budget. With current Air Force fuel consumption running over 40 billion gallons per year, fuel savings measured in fractional percentages have become important goals. These savings can be achieved using an onboard computer and associated display to continuously compute and advise the pilot of recommended altitude, airspeed and power settings for best fuel economy. The FSAS Computer and Remote Display Unit shown in Figure 1 provide these advisories.

A nonmilitary version of the FSAS Computer and its unique software are currently being used to great advantage by many commercial airlines. The computer software includes a proven all-world algorithm whose outputs are displayed as suggested values of speed, altitude and engine pressure ratio. The pilot can minimize his inflight fuel consumption by matching the aircraft's speed, altitude and EPR with these displayed values.

Figure 3 shows some typical advisories which would appear on the Remote Display Unit when flying in the Cruise mode. Two pages of data can be displayed on the RDU by alternately pressing the Page key. The top line of both pages shows the recommended altitude (FL) which the pilot attempts to match on a nearby altimeter. The Page 1 display shows the aircraft's current power setting (EPR) which should be matched to the target (TGT) power setting. The Page 2 displays show the current airspeed (MACH) and the recommended airspeed (TGT).

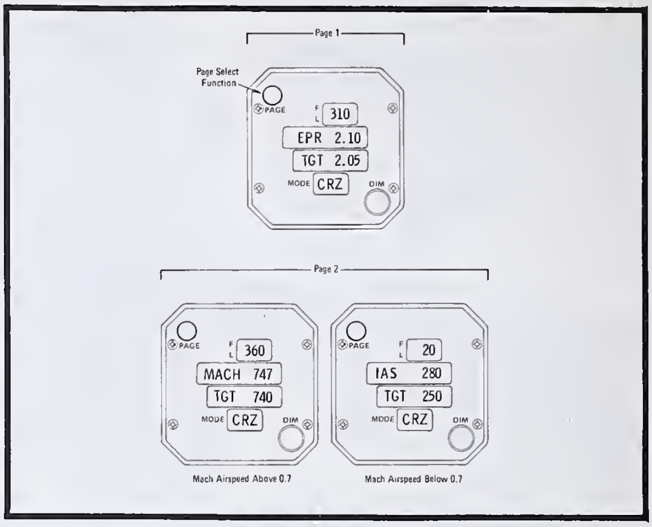
FUEL MANAGEMENT

The currently existing fuel measurement panel will be replaced by a new digital fuel panel (IFMCGS) which combines in a single microprocessor-based panel all controls and displays for measuring fuel, regulating fuel flow, and monitoring aircraft center-of-gravity. The new system will use input from existing tank sensors, exercise control of existing fuel pumps and valves, and communicate with other system elements through the new MIL-STD-1553B Data Bus. A pilot's view of the new panel is shown in Figure 4.

As illustrated in Figure 4, there are separate digital displays for: the four wing tanks (No. 1 - 4), the center wing tank (CTR WING), two body tanks (AFT & FWD BDY), two reserve tanks (RSV 1 & 2) and the upper deck tank. Also displayed are: total fuel in all tanks (upper left of panel), amount and rate of fuel being off-loaded (upper right), and current aircraft center-of-gravity (lower right). Selected tanks have an indicator light to warn of a low fuel condition.

The new panel has toggle switches to control fuel pumps, lighted pushbutton switches to control fuel valves, and status lights to verify their function. The solid connecting line engraved at the top of the panel indicates fuel flow from the various tanks to the -135 aircraft engines. The dotted lines at the bottom of the panel indicate fuel transfer from one tank to another, or to the refueling boom.

FIGURE 3 Remote Display Unit showing two pages of advisories



Mounted in the aircraft bay beneath the cockpit will be two additional items of equipment: a Fuel Management Electronics Unit and a Tank Interface Unit. The Electronics Unit will continuously calculate the aircraft center-of-gravity, as fuel is consumed and transferred, for display on the new fuel panel. The Tank Interface Unit — a standard calibration interface for tank sensors — allows the existing panel to be removed and the new panel to be installed without recalibrating the fuel measuring system.

INTEGRATED DATA TRANSFER

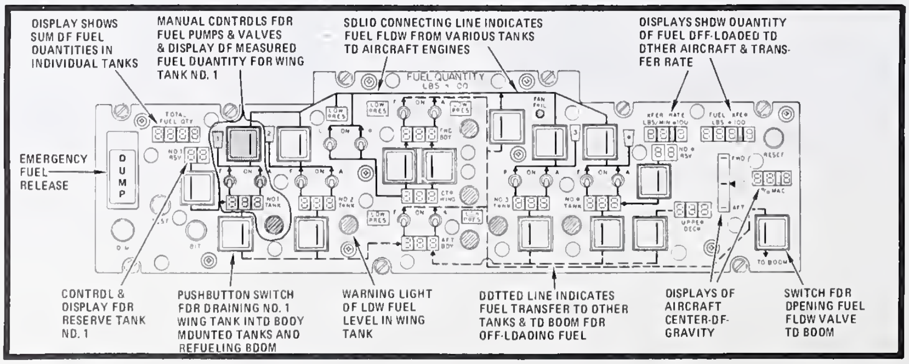
New ICDU

The new Integrated Control and Display Unit (ICDU) provides a centralized means for entering, displaying and routing the pilot's commands, via the Data Bus, to the Fuel Savings Advisory System and INS/DNS units, and providing center-of-gravity initialization data to the new digital fuel panel. The new ICDU resembles the type C-11020/ASN CDU being produced for the A-10 aircraft, with revised control/displays for the -135 application.

As shown in Figure 5, the new ICDU has a 8-line by 22-character data display on a cathode ray tube, with switches on either side to position data at the desired line. Below this are function select switches at the left and a full alphanumeric keyboard at the right. Data displayed on the ICDU includes:

- **Fuel Savings Parameters**
- **Vertical Flight Plan Parameters**
- **Lateral Flight Plan Parameters**
- **INS/DNS Navigation Data**
- **Center-of-Gravity Data**
- **Fuel Savings Modes**
- **Fuel Measurement Data**
- **Overall System Status**
- **Line Replaceable Unit Status**
- **Air Data Information**
- **Takeoff/Landing Data**

FIGURE 4 Closeup of integrated Fuel Measurement/Center-of-Gravity System Panel

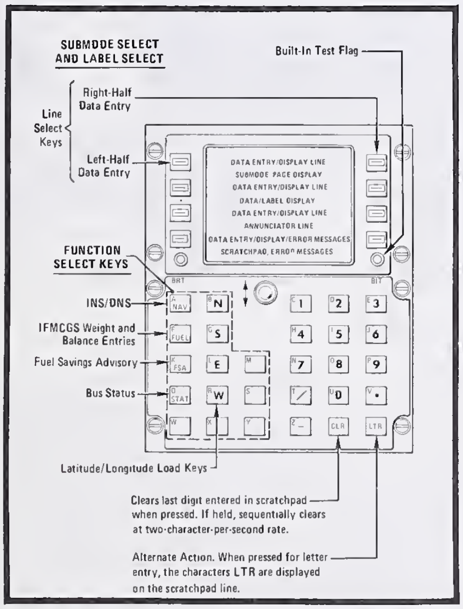

DISPLAY SHOWS SUM OF FUEL QUANTITIES IN INDIVIDUAL TANKS
MANUAL CONTROLS FOR FUEL PUMPS & VALVES & DISPLAY OF MEASURED FUEL QUANTITY FOR WING TANK NO. 1
SOLID CONNECTING LINE INDICATES FUEL FLOW FROM VARIOUS TANKS TO AIRCRAFT ENGINES
DISPLAYS SHOW QUANTITY OF FUEL OFF-LOADED TO OTHER AIRCRAFT & TRANSFER RATE
FUEL QUANTITY LBS × 00
TOTAL FUEL QTY
EMERGENCY FUEL RELEASE
DUMP
NO 1 RSV
NO 1 TANK
NO 2 TANK
FWD BDY
CTR WING
AFT BDY
NO 3 TANK
NO 4 TANK
NO 4 RSV
UPPER DECK
FWD
AFT
% MAC
RESET
TO BOOM
CONTROL & DISPLAY FOR RESERVE TANK NO. 1
PUSHBUTTON SWITCH FOR DRAINING NO. 1 WING TANK INTO BODY MOUNTED TANKS AND REFUELING BOOM
WARNING LIGHT OF LOW FUEL LEVEL IN WING TANK
DOTTED LINE INDICATES FUEL TRANSFER TO OTHER TANKS & TO BOOM FOR OFF-LOADING FUEL
DISPLAYS OF AIRCRAFT CENTER-OF-GRAVITY
SWITCH FOR OPENING FUEL FLOW VALVE TO BOOM

When data is keyed in to the ICDU, it is first displayed on the bottom line (scratchpad) for verification, then shifted up to the desired line position by pressing one of the data entry (line select) switches. Pressing the line select key also transfers the data to the appropriate computer. Figure 6 shows some representative display pages encountered in loading and controlling parameters for fuel savings advisories, fuel management, and aircraft navigation.

Avionics equipment used to be interconnected by handwiring. This resulted in massive wiring bundles, numerous EMI filters, and cumbersome cable shielding. To avoid this, a technique was developed — called the data bus — which allows multiple avionics system elements to communicate over a single, shielded, two-conductor cable under the command of a master controller. This approach improves EMI/EMP protection and allows more equipment to later come on-line without significant rewiring.

The Data Bus Controller for this system is the Bus/Subsystem Interface Unit (BSIU). The BSIU contains a microprocessor for control of the bus, and electronics for interfacing the individual system elements to the bus. As new equipment is added, the microprocessor is reprogrammed and system interface modules are added, as required. Both the BSIU and the FSAS Computer are mounted on an equipment rack located on the backwall of the cockpit.

FIGURE 5 Features of new ICDU


SUBMODE SELECT AND LABEL SELECT
Built-In Test Flag
Line Select Keys
Right-Half Data Entry
Left-Half Data Entry
DATA ENTRY/DISPLAY LINE
SUBMODE PAGE DISPLAY
DATA ENTRY/DISPLAY LINE
DATA/LABEL DISPLAY
DATA ENTRY/DISPLAY LINE
ANNUNCIATOR LINE
DATA ENTRY/DISPLAY/ERROR MESSAGES
SCRATCHPAD, ERROR MESSAGES
FUNCTION SELECT KEYS
BRT
BIT
INS/DNS
IFMCGS Weight and Balance Entries
Fuel Savings Advisory
Bus Status
A NAV
B N
C 1
D 2
E 3
F FUEL
G S
H 4
I 5
J 6
K FSA
L E
M
N 7
O 8
P 9
Q STAT
R W
S
T /
U 0
V •
W
X
Y
Z _
CLR
LTR
Latitude/Longitude Load Keys
Clears last digit entered in scratchpad when pressed. If held, sequentially clears at two-character-per-second rate.
Alternate Action. When pressed for letter entry, the characters LTR are displayed on the scratchpad line.

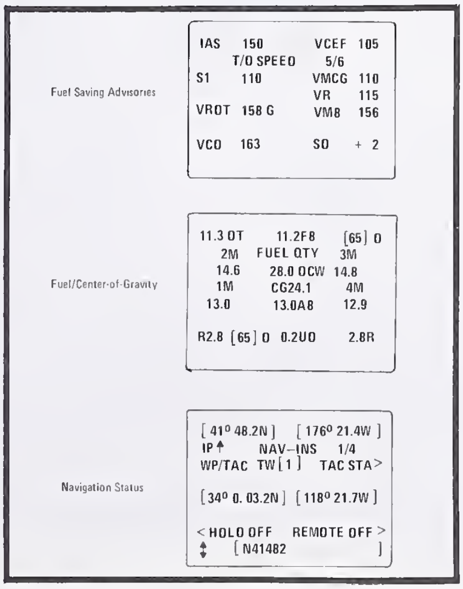
MAINTAINABILITY AND GROWTH

The FSA/CAS equipment items were designed for full maintainability at the designated Air Force organizational maintenance levels. Such features as built-in test, failure displays to the Line Replaceable Unit (LRU) level, modular packaging and simplified mounting will help reduce repair time, maintenance manloading, aircraft downtime and sparing requirements. When LRUs are removed they will be sent to the designated depot (presently, the contractor's facility).

The Fuel Savings Advisory/Cockpit Avionics System is specifically designed to support the Air Force's overall planning for a phased upgrading of the -135 aircraft cockpit electronics. The introduction of the multiplex data bus is the first step in phasing in such capabilities as the mission computer, VHF communication, secure voice, global positioning system, and a second INS or CDU. As new equipment is added, those items having a MIL-STD-1553B interface can be directly coupled to the Data Bus, and those not having it will be coupled through a new subsystem interface module added to the BSIU.

The BSIU, with its modular design, can accommodate four extra subsystems interface modules to interface four new line replaceable units. The BSIU hardware and software are carefully partitioned so that new equipment items can be added without disturbing the existing equipment and their associated software can be reprogrammed without disturbing the bus control software. Communications flow between new items added and existing equipment can easily be established by reprogramming the BSIU microprocessor.

The computational elements of the new system have ample capacity for growth in memory and throughput to handle later demands for additional processing capability. The expected growth in Data Bus use will pose no problem since the bus loading factor for the entire initial FSA/CAS installation is less than 5 percent.



```
IAS    150        VCEF  105
    T/O SPEED      5/6
S1     110        VMCG  110
                  VR    115
VROT   158 G      VM8   156

VCO    163        SO    + 2
```

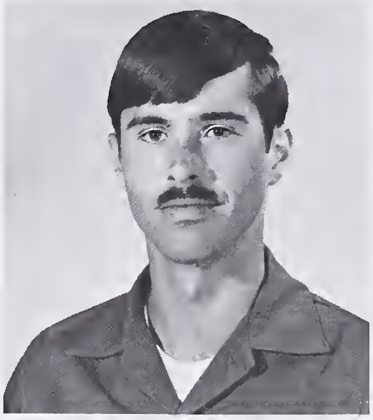
```
11.3 0T     11.2F8    [65] 0
  2M     FUEL QTY    3M
 14.6     28.0 OCW  14.8
  1M       CG24.1     4M
 13.0      13.0A8    12.9

R2.8 [65] 0  0.2U0    2.8R
```

```
[ 41° 48.2N ]   [ 176° 21.4W ]
IP ↑       NAV–INS    1/4
WP/TAC  TW [1]   TAC STA>

[34° 0. 03.2N ] [ 118° 21.7W ]

< HOLD OFF    REMOTE OFF >
↕    [ N41482              ]
```

FIGURE 6 Typical data displayed on ICDU

AIRCRAFT MAINTENANCE

SSgt Gary A. Chasteen, 5th BMW, Minot AFB, is Strategic Air Command Maintenance Airman of the Month. He demonstrates exceptional technical ability, leadership and initiative in his duties as electronic warfare systems field shop supervisor. As the primary technician and trainer for the AN/ALT6B and AN/ALQ 122 mockups, he is responsible for a significant upward trend in reliability and capability of those systems. Over the past six-month period, both system performances have been the best in 15th Air Force. During GALLANT EAGLE 82, a RDJTF bare base deployment exercise, SSgt Chasteen was responsible for the outstanding system capabilities achieved by the entire BWS branch. In preparation for the deployment, 14 aircraft were reconfigured which required removal of 28 transmitters, realignment of their internal components and reinstallation. In addition, seven of the 28 were repaired. SSgt Chasteen did all of the work — the systems performed 98% capable, a remarkable achievement. His total performance marks him a truly professional NCO worthy of this recognition and a valuable asset to SAC and the United States Air Force.



FLYING CREW

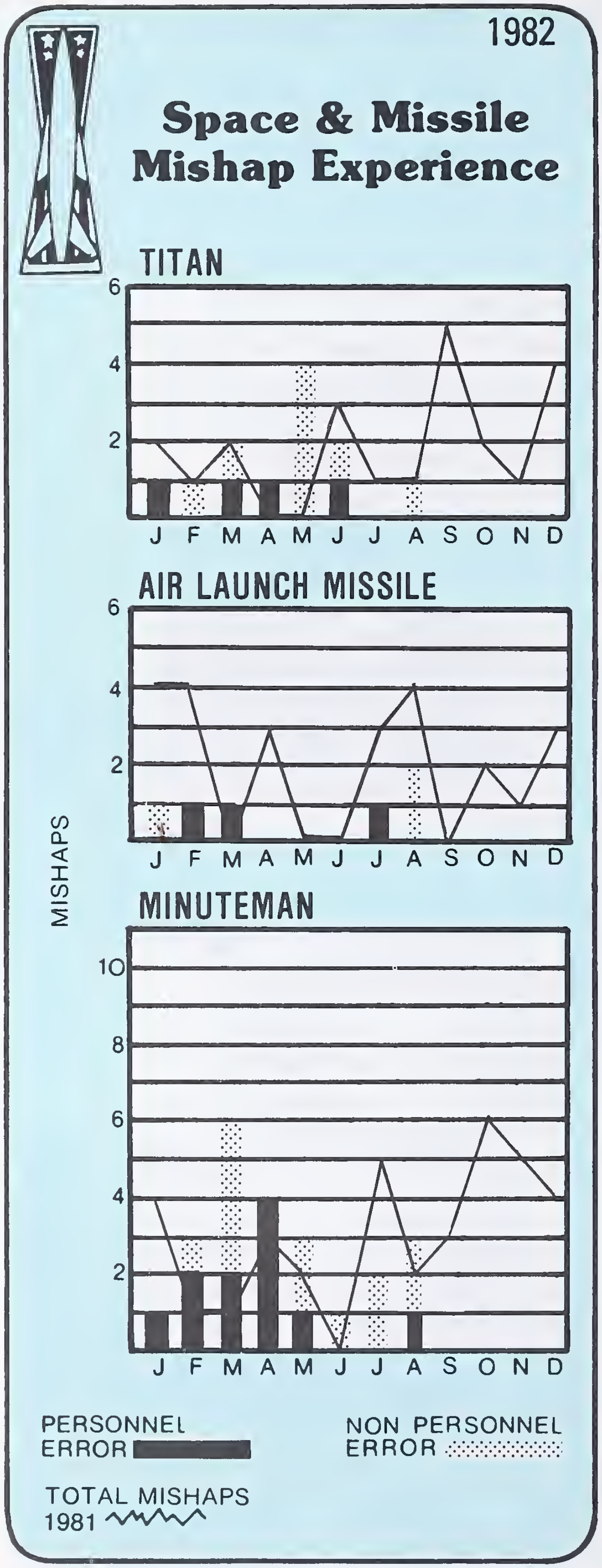
Capt Gary Love, AC; 1Lt Charles Robertson, CP; 2Lt Michael Kolb, N; and SSgt Ricardo Reed, BO, 911 AREFS, were on a Coronet East redeployment mission from RAF Fairford to Pease AFB. Halfway across the Atlantic Ocean, just after refueling two F-111 receivers, the air refueling to engine manifold valve failed, trapping 14,000 pounds of fuel in the body tanks (12,000 in the forward body tank and 2,000 in the aft body tank). A few minutes later the number three generator shaft failed (determined on postflight) causing violent oil pressure fluctuations and forcing immediate shutdown of the number three engine. The crew declared an emergency, diverted to Loring AFB, and coordinated a climb to FL 350 into the North Atlantic Track System. Since their radar was also inoperative, they kept the fighters with them to assist with weather avoidance of numerous thunderstorms between them and their destination. Once past the significant weather, the fighters broke off and continued safely to their destination. Meanwhile, the tanker executed a gentle enroute descent to an ILS approach. They landed uneventfully in an 18-knot gusty crosswind and shut down the engines with minimum fuel.

MISSILE MAINTENANCE

TSgt Bobby W. Neal, 308th MMS, Little Rock AFB, is SAC ICBM Maintenance Airman of the Month. He is assigned to the Reentry Vehicle Branch where he is responsible for scheduling and directing the 308th SMW's entire fleet of MK VI reentry systems. Sgt Neal directs maintenance and calibration for over $750,000 worth of tools, test and handling equipment while maintaining, preparing and submitting classified inventory listings containing over 700 items. As senior munitions controller, he coordinates time change requirements, as well as equipment and warhead/RV components involving direct coordination with HQ SAC and San Antonio ALC. Command level decisions involving thousands of man-hours and dollars worth of maintenance and transportation costs are made on the basis of the information Sgt Neal manages. He is a proven manager and leader; he has led his section outstandingly through demanding daily requirements and many higher headquarters inspections. In addition to the myriad of managerial and technical details as NCOIC of Munitions Control, Sgt Neal also fills the demanding duties of Explosive Safety NCO for the 308th SMW and Nuclear Safety NCO for the 308th MIMS. He regularly instructs maintenance personnel on both explosive and nuclear safety and recently prepared and produced an explosive safety training video tape. His effort helped provide the cornerstone of a program which earned the USAF Nuclear Safety Award for 1981. Sgt Neal's demonstrated dedication and devotion to duty are the hallmark of true professionalism. NCOs of this caliber are the cornerstone of today's Air Force.

Missile Crew

The 44th SMW Crew S-010: Maj Gary L. Kaspar, MCCC and 2Lt Tracy N Pirtle, DMCCC is SAC Missile Crew of the Month. Crew S-010 was the primary crew for a recent simulated electronic launch Minuteman test. They coordinated with other flight commanders and selected the test operations crews, supervised the crew training and prepared the flight resources for the test. Pretest preparation and verification required extensive coordination and control to insure proper configuration. Communications equipment problems developed during the test and Crew S-010 was required to accomplish all site maintenance and security functions at two launch facilities using VHF radio procedures. The entire test effort was superb but the most outstanding contribution of Crew S-010 was their control of the test communications net. They established the test pace and systematically completed each phase of the test, anticipating problems and solving them before they developed. The leadership demonstrated by this crew promoted efficiency and inspired others to perform with a high degree of competence. Their efforts greatly contributed to the success of the test and the validity of the data that was gathered.



HEADS UP FLYING CLUB

Capt David R. Johnson, aircraft commander, 2d ACCS, and his crew were flying a Looking Glass mission. This mission is unique in several ways. Each flight is made with a complete battle staff, directed by a SAC general officer — some 20 people in all. The aircraft is flown on random headings in an operating area, the crew advising the air traffic control center of each new turn about two minutes before the heading is changed. Capt Johnson had just begun a 180 degree turn when center called, asking him to return to his original heading. Using the shallow banks required for the mission, Capt Johnson had just reversed the direction of his turn when the controller asked him to descend 2,000 feet. There was no urgency in his voice. Capt Johnson describes what happened next:

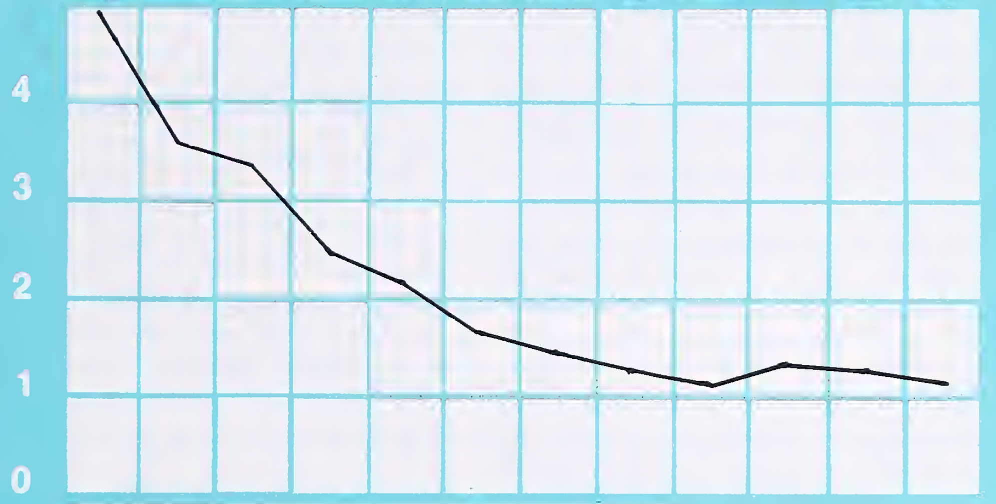
"My whole windshield seemed filled with other aircraft. They came out of a cloud bank with no warning. Instinctively, I pushed the yoke forward and held it for a moment, praying I was in time. Then, to clear the tail of my aircraft from the KC-135 and four F-4s which seemed right on top of me, I pulled back. It was over in a few seconds; we were safe. I don't think the other aircraft saw us."

In the back of the aircraft, battle staff members were going about their work, many of them out of their seats as their duties required. Some found themselves momentarily pushed to the ceiling by the sudden maneuver, but miraculously no one was hurt. The cause of the near collision is still under investigation, but Capt Johnson and the air traffic control center agreed — the tanker and fighters had come within 100 feet of Capt Johnson's aircraft. Only his lightning quick response, reinforced by a consistent self-discipline that puts safety first, saved the lives of more than two dozen people and several valuable Air Force aircraft.

1982 Flying Safety Rate

SAC CLASS A MISHAP RATE (PER 100,000 FLYING HRS)

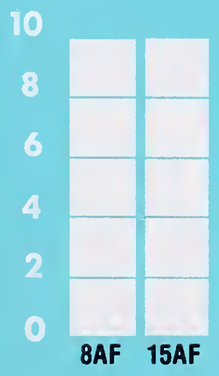
1981 RATE	7.13	3.61	3.45	2.54	2.05	1.70	1.47	1.3	1.14	1.36	1.25	1.15



26.4	53.9	86.0	117.1	146.5	175.9	203.4	233.1				

CUMULATIVE FLYING TIME (1,000 HRS)

MISHAPS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1981	2	0	1	0	0	0	0	0	0	1	0	0
1982	0	0	0	0	0	0	0	0				



MISHAP STATUS

+KC-135A	MAR 82
+KC-135A	MAR 82

LEGEND ∧ = 1981 RATE (SAC)
+ = ANG
– = AFRES

Continued from pg. 9

PASSENGER BRIEFINGS

situations where the aircraft has experienced loss of pressurization or smoke has entered the passenger cabin. We wouldn't want to alarm the passengers by relating these incidences, but we do want them prepared if something like that happened on our flight. You would also brief the operation and location of life rafts. Emergency exits should be pointed out as well as the location and meaning of the luminescent arrows located down each side of the aircraft. It's important that each passenger is aware that the arrows point to the nearest emergency exit. When seating the passengers, you may want to place children and aged individuals near, but not immediately adjacent to, emergency exits. The exit seats should be occupied by able bodied individuals who can open emergency exit latches and assist in getting passengers out should evacuation be required. Everyone should be aware of the total number of people on board and where to assemble outside the aircraft should they have to evacuate the aircraft quickly. You must brief and sound the alarm bell signals, mentioning that the alarm bell will be sounded after the engines are started and just before the aircraft is taxied. This will acquaint the passengers with the sound of the alarm system against the background of engine noise. One note, there really is no need to brief bailout alarm signals since bailout capability does not exist when carrying passengers. In addition to the aircrew requirements listed in SACR 55-12 and the flight manual there are a few other items you may wish to consider. Preparing your passengers for the strange noises they may hear will help eliminate fears before they develop. Describe things like the roar of the gear as it is raised or lowered, the sound of the flaps coming up, speed brake buffet, the change in engine noise as water injection runs out and the rush of air as the air conditioner is turned on. You might also describe measures required to keep ears and sinuses open during ascent and descent.

Remember, the passenger briefing has become an item of high interest and rightfully so. It is our responsibility to make sure each passenger who flys aboard our aircraft understands exactly what is expected of them and what we will do for them while they are aboard. Passenger safety is a primary concern. Your carefully prepared and confidently presented passenger briefing can significantly increase passenger comfort and will definitely enhance safety. This one small, but important task, can help us better prepare and concentrate on our primary job. *Fly the airplane.*

Continued from pg. 17

A BADGE OF HONOR

in March 1974, Air Force Regulation 35-42 deleted the requirement for formalized missile training. This regulation also stated that ". . . missile launch crewmembers were eligible for the award on the date qualified to perform launch crew duties in a nontraining status." (In other words, when certified by their unit commander.) In April 1979, the name of the Missileman Badge was changed to delete all sex-based terminology throughout the regulation. Thus, the Missileman Badge became the Missile Badge.

The original design of the Missile Badge was prepared by the United States Army Heraldic Division at Arlington, Virginia. Although no official description of the design is available, we do know they placed four significant elements on the badge. The use of the missile is obvious. It's a generic missile, specifically designed to resemble no particular missile in our inventory. Second, the badge was given an hourglass shape, most likely to signify the timeliness of response of our missile weapon systems. The four stars, two on either side of the missile, represent the operational domain of our various missile systems, the total aerospace environment. Finally, the two vertical bands beneath the missile represent vapor trails emitted by a missile during flight.

The Senior Missile Badge has a large star centered at the top. The star was first used on military aviators' wings on October 27, 1917. The star is awarded after three years experience in guided missiles. The Master Missile Badge is awarded after seven years experience and is the highest award attainable. This badge differs from the Senior Missile Badge by a wreath surrounding the star and signifies proven command ability. The wreath was first introduced on Air Force wings on November 10, 1941.

This is the evolutionary design of the "Pocket Rocket," the Badge of Honor for today's missilier and a part of our professional heritage. Wear it with pride.

SAC SAFETY SCREEN

644 BMS, K I Sawyer Crew R-35: P Capt William C Buckley, CP Capt Kenneth C Pearce, RN Capt Forrest P Smith, N 1Lt Lloyd B Helton Jr, EW 2Lt Jeffrey S McIntyre, G SSgt Jeffrey S Fannin

46 AREFS, K I Sawyer Crew R-114: P Capt Richard D Poteet, CP 1Lt Michael J Kling, N 2Lt Timothy G Martin, BO A1C Timothy Churchill

416 BMW, Griffiss Crew E-16: P Capt Steven E Cameron, CP 1Lt Michael J McElwee, IB Capt James R Spitler, IN 1Lt Wendell D Morgan, NE 1Lt Michael R Moeller, IS SSgt Steven H Ingerick

416 BMW, Griffiss Crew R-104: R Capt Quincy Z Edmonds, CP 1Lt Daniel P Martin, N Capt Christopher A Dearinger, BO Sgt Stephen P Roche

509 AREFS, Pease Crew E-121: IP Capt David W Roberts Jr, CP 1Lt Robert D Tardie, IN 1Lt Kim A High, IBO SSgt Timothy W Malloy

509 AREFS, Pease Crew E-122: P Capt Dale G Cook, CP 1Lt Michael O'Rourke, N Capt Guy E Cyr, BO SrA Castordarryl Franklin

393 BMS, Pease Crew E-09: P Capt Robert B Manning, RN Capt Jaurequy L Jaggers

100 AREFW, Beale Crew R-162: P Capt Monty W Montgomery, CP 1Lt William E Phillips, N Capt Eric L Kilijanski, BO SSgt Donald K Smith

24 SRS, Eielson Crew E-03: P Capt Samuel R Torrey, CP Lt Richard E Black, N-1 Capt Stephen P Marino, N-2 Capt Stephen P Francis

24 SRS, Eielson Crew E-16: P Capt James F Powell, R-1 Lt Jeffery A Turner, R-2 Capt Walter F Knochenmus, R-4 Lt Steven E Schafer, MT Lt Kerry A Crooks, ET SSgt William D Pickle, PT SSgt Jerry Cantor

69 BMW, Loring Crew E-05: P Capt Brandon A Buttrick, CP Capt Alan M Krukowski, CP 1Lt Colin J Snell, RN Capt Edward L Dorey, N 1Lt Curtis L Fackler, EWO 1Lt Howard O Triebold III, G A1C Craig M McBurney

42 AREFS, Loring Crew E-101: P Capt John E Haverstock, CP Capt Russell W Rybka, N Capt Benjamin R Nevin, BO SSgt Donald M Fischer

407 AREFS, Loring Crew E-160: P Lt Col Wayne A Myers, CP Lt Thomas Shamburger, N Maj Harold F Wiand, BO SSgt Philip A Rogers

644 BMS, K I Sawyer Crew R-13: P Capt Robert L Parker, CP Capt Lance R Clark, RN Capt Lynn J Stone, N 1Lt Floyd W Gowans, EW Capt Edward W Rohloff, G A1C Michael L Roy

321 SMW, Grand Forks Crew R-075: MCCC 1Lt Christopher P Donigan, DMCCC 2Lt Joe N Evans

381 SMW, McConnell Crew E-011: MCCC Capt Gregory P Intoccia, DMCCC 1Lt Howard K James, MSAT A1C Robert B Harry, MFT SrA Thomas E Seward

351 SMW, Whiteman Crew S-151: MCCC Capt John D Gentry, DMCCC 1Lt Kerry W Davis

308 SMW, Little Rock Crew R-050: MCCC 1Lt Dennis M Piper, DMCCC 2Lt Wesley T Fleming, MSAT Sgt Pleas W Walker, MFT Sgt Dean R Marchand

The SAC Safety Screen is an honor roll of SAC's most professional crews. To gain listing on the Screen, crew members must be nominated by their unit commanders and meet high selection criteria of experience in their aircraft or missile system *IAW AFR 127-2/SS1*.

UNIVERSITY OF FLORIDA
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HALL OF FAME

FLARE

TACTICAL FLYING

OVER TWENTY-SIX YEARS

170 AREFG, McGuire (NJANG)	Feb. '56

OVER TWENTY-FOUR YEARS

171 AREFW, Greater Pittsburgh (PAANG)	Mar. '58
157 AREFG, Pease (NHANG)	Jun '58

OVER TWENTY-THREE YEARS

940 AREFG, Mather (USAFR)	May '59
307 AREFG, Travis	Sept '59

OVER TWENTY-ONE YEARS

151 AREFG, Salt Lake City (UTANG)	Feb '61
134 AREFG, McGhee Tyson (TNANG)	Aug '61

OVER TWENTY YEARS

11 SG, Fairford	Feb '62
340 AREFG, Altus	Jun '62
96 BMW, Dyess	Aug '62

OVER NINETEEN YEARS

19 BMW, Robins	Aug '63

OVER SEVENTEEN YEARS

160 AREFG, Rickenbacker (OHANG)	Dec '64
320 BMW, Mather	Jul '65

OVER SIXTEEN YEARS

452 AREFW, March (USAFR)	Sep '66

OVER FIFTEEN YEARS

92 BMW, Fairchild	Feb '67
55 SRW, Offutt	Jul '67
2 BMW, Barksdale	Aug '67

OVER THIRTEEN YEARS

5 BMW, Minot	Feb '69
42 BMW, Loring	Sep '69

OVER TWELVE YEARS

141 AREFW, Fairchild (WAANG)	Oct '69
28 BMW, Ellsworth	May '70

OVER TEN YEARS

101 AREFW, Bangor (MEANG)	Mar '72
306 SW, Mildenhall	Apr '72
416 BMW, Griffiss	May '72
305 AREFW, Grissom	Aug '72

OVER NINE YEARS

379 BMW, Wurtsmith	Apr '73

OVER EIGHT YEARS

931 AREFG, Grissom (USAFR)	Feb '74
384 AREFW, McConnell	Mar '74
189 AREFG, Little Rock (ARANG)	May '74

OVER SEVEN YEARS

43 SW, Andersen	Dec '74
68 BMW, Seymour Johnson	Sep '75

OVER FIVE YEARS

410 BMW, K.I. Sawyer	Apr '77
190 AREFG Forbes (KSANG)	Apr '77
128 AREFG Milwaukee (WIANG)	Jul '77

ICBM

OVER EIGHTEEN YEARS

1 STRAD, Vandenberg	Sep '64

OVER TWELVE YEARS

341 SMW, Malmstrom	Apr '70

OVER NINE YEARS

390 SMW, Davis-Monthan	Jul '73

OVER SEVEN YEARS

351 SMW, Whiteman	Oct '74
91 SMW, Minot	Nov '74

OVER SIX YEARS

321 SMW, Grand Forks	Feb '76

To gain listing in the Hall of Fame, a SAC or ARF unit must be Class A mishap-free for 48 months.

*U.S. Government Printing Office